Mathematics
November 2018 Paper 2 (Calculator Allowed)
Part 2 (Second half of the paper)
Edexcel Foundation Tier

Time: 45 minutes

Q	Topic	Max Mark	My Marks
18	Percentage Increase, Multipliers	2	
19	Solving Equations, Factorising	4	
20	Venn Diagrams	6	
21	Scatter Graphs	2	
22	Angles in Parallel Lines	4	
23	Compound Interest	5	
24	Area, Proportion	5	
25	Gradient of a Line	3	
26	Expanding and Factorising Quadratics	4	
27	Standard Form	4	
	Total	39	

18 Bill wants to increase 150 by 3%

He writes down

$$150 \times 1.3 = 195$$

Bill's method is wrong.

(a) Explain why.

....

....

(1)

Sally wants to decrease 150 by 3%

(b) Complete this statement to show how Sally can decrease 150 by 3%

$$150 \times \text{............................} = \text{............................}$$

(1)

(Total for Question 18 is 2 marks)

19 (a) Solve $3(x - 4) = 12$

$x = $ ....

(2)

(b) Factorise fully $9b - 3b^2$

....
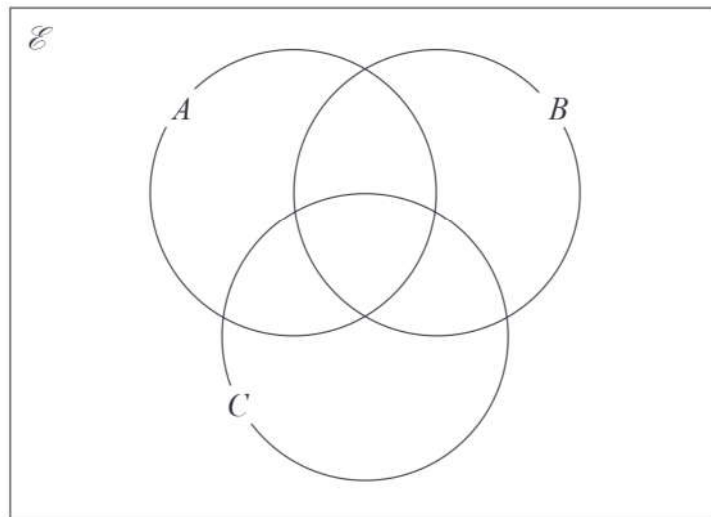
(2)

(Total for Question 19 is 4 marks)

20 $\mathscr{E}$ = {even numbers between 1 and 25}
$A = \{2, 8, 10, 14\}$
$B = \{6, 8, 20\}$
$C = \{8, 18, 20, 22\}$

(a) Complete the Venn diagram for this information.
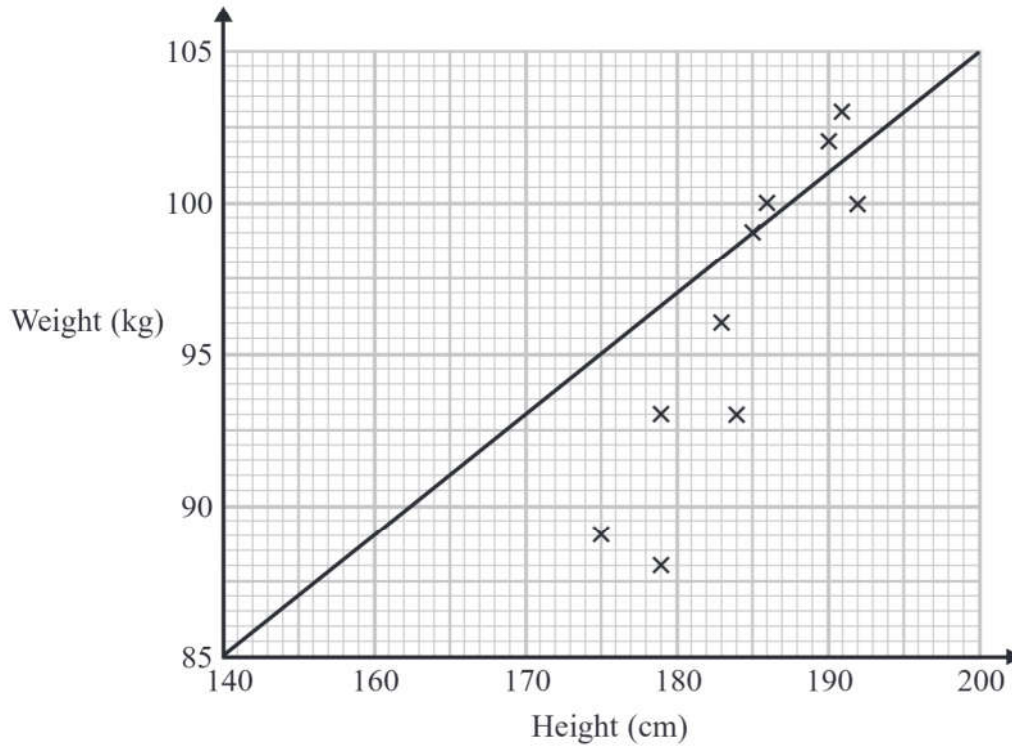

(4)

A number is chosen at random from $\mathscr{E}$.

(b) Find the probability that the number is a member of $A \cap B$.

....

(2)

(Total for Question 20 is 6 marks)

21 Sean has information about the height, in cm, and the weight, in kg, of each of ten rugby players.

He is asked to draw a scatter graph and a line of best fit for this information.

Here is his answer.

Sean has plotted the points accurately.

Write down two things that are wrong with his answer.

1 ....

....

2 ....

....

(Total for Question 21 is 2 marks)

22 *BEG* is a triangle.
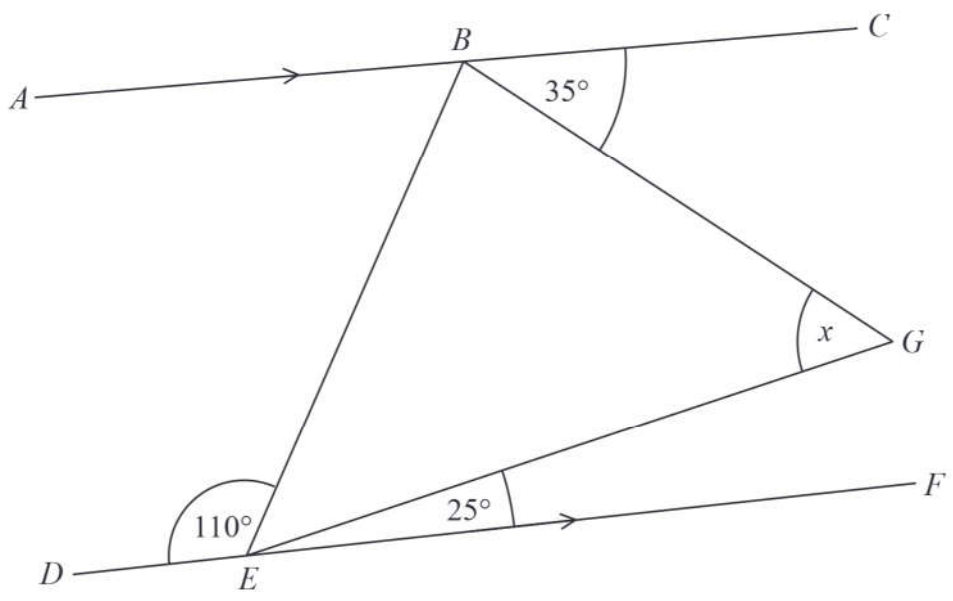
ABC and *DEF* are parallel lines.

Work out the size of angle *x*.
Give a reason for each stage of your working.

....°

(Total for Question 22 is 4 marks)

Turn over ▶

23 Northern Bank has two types of account.
Both accounts pay compound interest.

| **Cash savings account** |
| Interest |
| 2.5% per annum |

| **Shares account** |
| Interest |
| 3.5% per annum |

Ali invests £2000 in the cash savings account.
Ben invests £1600 in the shares account.

(a) Work out who will get the most interest by the end of 3 years.
You must show all your working.

(4)

In the 3rd year the rate of interest for the shares account is changed to 4% per annum.

(b) Does this affect who will get the most interest by the end of 3 years?
Give a reason for your answer.

....

....

....

(1)

(Total for Question 23 is 5 marks)

24 The diagram shows a floor in the shape of a trapezium.
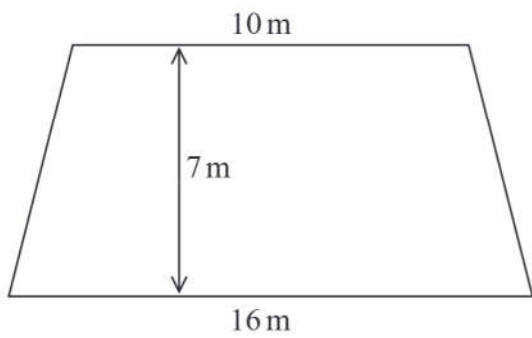
John is going to paint the floor.

Each 5 litre tin of paint costs £16.99
1 litre of paint covers an area of $2\,m^2$

John has £160 to spend on paint.

Has John got enough money to buy all the paint he needs?
You must show how you get your answer.

(Total for Question 24 is 5 marks)

Turn over ▶

25 A is the point with coordinates (5, 9)

 B is the point with coordinates (d, 15)

 The gradient of the line AB is 3

 Work out the value of d.

....

(Total for Question 25 is 3 marks)

26 (a) Expand and simplify $(5x + 2)(2x - 3)$

....

(2)

(b) Factorise $x^2 + 4x + 3$

....

(2)

(Total for Question 26 is 4 marks)

27 (a) Write the number 0.000 075 47 in standard form.

....

(1)

(b) Write 3.42×10^4 as an ordinary number.

....

(1)

(c) Work out $\dfrac{2.3 \times 10^4 \times 6.7 \times 10^3}{5 \times 10^{-8}}$

....

(2)

(Total for Question 27 is 4 marks)

TOTAL FOR PAPER IS 80 MARKS